REMARKS / ARGUMENTS

The specification has been amended so as to correct the informalities observed by the Examiner. Accordingly, the Objection is deemed to have been overcome.

Claims 1-7, 10, 12, 14-18, 20-21, 23-25, 30-31, and 33-34 have been rejected under 35 USC 102(b) as being anticipated by Jain et al (US Patent No. 5,745,126 ("Jain").

Regarding claim 1, Jain discloses a central master computer and a plurality of slave computers (col. 31, lines 15-67, and col. 32, lines 1-18). Image frame capture is done by each slave computer, and image processing is done on each slave computer. (col. 31, lines 20-23). In fact, Jain clearly states that "The central master computer and the remote slave computers communicate at a high symbolic level; **minimal image information is exchanged**. Hence only a very low network bandwidth is required for master-slave communication." (col. 31, lines 42-46). Thus, mostly symbols are communicated from the slave computers to the central master computer.

By contrast, independent claim 1, as herein amended, as well as independent claims 20, 26, and 30, as herein amended, all require "communication enabling a **continually updated image display** on the at least one UI representing a current state of the second VP". This **maximal communication of image information** requires a high-bandwidth connection

to enable real-time dynamic updating of the display on the UI of the images provided by a camera of the second VP.

Further, claim 1 requires that a first VP have "a link function that is a control function executable by the first VP, and being for establishing communication between a second VP and at least one UI". Note that each VP of Applicants' invention is responsible for image processing and analysis. Examiner inherently asserts that a VP of Applicants' invention is like a "slave computer" of Jain by citing Fig. 15 and col. 31, lines 36-37. However, Jain is silent on any slave computer including a link function as required by claim 1, and is also silent on any slave computer initiating communication. Instead, in Jain, the **master computer** initiates communication between itself and a plurality of video processing workstations (col. 31, lines 36-37, and col. 31, lines 51-54). By contrast, in Applicants' invention, a first VP executes a "link function" to initiate and establish communication between the UI and a second VP. Thus, a first VP (cf. "slave" in Jain) in Applicant's invention initiates communication between a second VP and a UI (cf. "master" in Jain). Thus, the roles of "master" and "slave" as set forth in Jain do not apply to VPs and UIs in Applicant's invention, since a VP exhibits the video processing functions of a "slave", **and** the communication initiation functions of a "master". Thus, Jain fails to teach a "link function", since Jain does not teach a first VP " to initiate and establish communication between the UI and a second VP."

At the level of system architecture, the ***architecture*** of the machine

vision system of Applicants' invention as set forth in claims 1-34 is distinctly different from the architecture set forth in Jain in section 9.1.4 of col. 31 and col. 32. In Jain, a master central graphical work station controls four video processing work stations (col. 31, lines 36-37) (slaves). The four video processing workstations function as slaves to the master central graphical work station. By contrast, in Applicants' invention as set forth in all the claims (herein amended) there is no single master, since each VP can control another VP of a plurality of VPs. This control is mediated using a UI. By contrast, Jain is silent on any computer being used to mediate control. Thus, the architecture set forth in Applicants' claims implies that each control event involves at least three computers (a first VP, a second VP, and a UI), whereas a control event as set forth in Jain involves only two computers (a master and a slave).

Regarding claim 1, the Examiner states on page 2 that "A method for instructing the interface in communication with one processor to communicate with a second processor" is given in col. 31, lines 66-67, and col. 32, lines 1-2, but these lines merely state essentially that "the master computer ... will process the individual cameras". Thus, Jain is again stating that the master is controlling the slaves, since an individual camera is associated with a slave computer (Fig. 15). Thus, the Examiner's statement has been shown to be false.

The Examiner then states that "A link function establishes communication between a vision processor and the user interface and can be

activated to issue instructions to establish communication with another vision processor, citing col. 31, lines 55-57, and col. 32, lines 3-9. However, lines 55-57 of col. 31 discuss the **reaction** of the slave computers to the event wherein "based on the **master** computer's knowledge of the network ... a separate computer process starts the **slave** computer processes on selected remote machines", and then "each **slave** computer contacts the **master** computer", as in line 55 of col. 31. By contrast, as set forth in amended claim 1, "the link function being a control function executable by the first VP" is clearly different from Jain, since the vision processors are "slaves" in Jain, whereas in Applicant's invention, the vision processors (VPs) include "link functions" that are executed by a **first VP**, so as to establish "communication between a **second VP** and the at least one **UI**".

Col. 32, lines 3-9 merely states in essence that a slave computer receives requests from the master including information about processing a frame from a camera of the slave computer. Here again, there is only a master communicating with slaves, unlike Applicants' invention which includes a first VP, a second VP, and a UI; there being no master, and no slave.

Accordingly, the rejection of claim 1 is deemed to be overcome.

Regarding claims 2-3, as currently amended, the Examiner's rejection has been made moot. Further, the "video control buttons control video playback" from the laser disk player. This is not real-time communication of a

VP with a UI as in Applicants' invention set forth in claims 2 and 3, each now dependent on claim 1. Moreover, clicking on the graphical representation in Fig. 4 is NOT the same as clicking on a graphical representation of the link function displayed by the UI of Applicants' invention because that event causes the UI to begin communicating with another VP, thereby switching VPs (from a first VP to a second VP), and consequently **switching** the camera that is being viewed in real-time by the UI. Therefore, "clicking" on the graphical representation of the control of Fig. 4 does NOT execute a link function as claimed by Applicants. Additionally, claims 2 and 3 each depend from claim 1, herein deemed to be allowable as amended. Accordingly, the rejection of claims 2 and 3 is deemed to be overcome.

Regarding claim 4, as currently amended, Applicant has established above that Jain does not teach a "link function" as set forth in claim 1. Further, in col. 22, lines 6-7, a camera is represented by a text string. Jain is silent in section 4.1.1 on selecting a vision processor, merely selecting a camera. Moreover, claim 4 depends on claim 3, which depends on claim 1, herein deemed to be allowable. Consequently, claim 4 is deemed to be allowable.

Regarding claims 5-7, as currently amended, the rejection of claim 5 is moot. Regarding claims 6 and 7, these claims now include reference to "executing the link function", and Applicant has established above that Jain

does not teach a "link function" as set forth in claim 1. Further, claims 6 and 7 depend ultimately from claim 1, and so the rejection of claims 5-7, as currently amended, is deemed to be overcome.

Regarding claims 10 and 12, these claims now include reference to "executing the link function", and Applicant has established above that Jain does not teach a "link function" as set forth in claim 1. The Examiner has not provided a reference in Jain regarding "tracking ability" as a "change in the state of a sensor". Further, claims 10 and 12 depend ultimately from claim 1, and so the rejection of claims 10 and 12, as currently amended, is deemed to be overcome.

Regarding claim 11, this claim depends from claim 10 that now includes reference to "executing the link function", and Applicant has established above that Jain does not teach a "link function" as set forth in claim 1. Further, "machine vision systems" are used in industry, such as manufacturing of automobiles, or manufacture of electronic components. Television broadcasting is not typically considered an industrial activity, but is more likely to be considered entertainment or informational. In this sense, Jain is silent on an "industrial process event". Moreover, claim 11 depends from claim 10, which is deemed to be allowable. Accordingly, the rejection of claim 11 is deemed to be overcome.

Regarding claim 13, col. 17, lines 20-23 refer to how the "programmed reasoning system" decides what perspective on the "Environment model" will be seen by a viewer. Cameras contributed to building the Environmental model, but the Environmental model is not a plurality of cameras or a plurality of vision processors. Thus, this citation has NOTHING to do with to "executing the link function", as required by claim 1. Moreover, claim 13 depends from claim 1, which is deemed to be allowable. Accordingly, the rejection of claim 13 is deemed to be overcome.

Regarding claim 14, col. 22, lines 6-7 are silent on activating any VP, instead teaching that a viewer can choose any camera. Claim 14, as currently amended, refers to a "link function", and Applicant has previously established that Jain is silent on a "link function". Further, claim 14 now depends upon claim 1, deemed to be allowable. Accordingly, the rejection of claim 14 is deemed to be overcome.

Regarding claim 15, Applicant has established above that Jain does not teach a "link function" as set forth in claim 1, and has done so with reference to col. 31, lines 48-67. Moreover, this citation does NOT recite the "execution sequence of the VP", instead reciting an execution sequence of steps that involve a master computer and a plurality of slave computers, i.e., a "master-

slave information exchange protocol" (col. 31, line 46). Applicants do not teach "master/slave" computers, or a "master-slave information exchange protocol". Further, claim 15 depends upon claim 1, deemed to be allowable. Accordingly, the rejection of claim 15 is deemed to be overcome.

Regarding claims 16-18, claim 18 has been cancelled. Regarding claim 16, the Examiner cites col. 31, lines 66-67, and col. 32, lines 1-2, referring to the "asynchronous processing" of data, yet this language does not imply or require the limitation of currently amended claim 16, i.e., "the link function also terminates communication with the first VP in addition to establishing communication with the second VP". First, Jain teaches master-slave communication, and Applicant does not. Further, Jain is silent on teaching a "link function", as explained above. Yet further, claim 16 depends from allowable claim 1. Accordingly, the rejection of claim 16 is deemed to be overcome.

Regarding claim 17, although the Examiner cites col. 32, lines 52-58, this processing of video streams is independently processed close to the sources thereof" col. 31, lines 22-23. Also, recall that "the central master computer and the remote slave computers communicate at a high symbolic level; minimal image information is exchanged. Hence, only a very low network bandwidth is required for master-slave communication" (col. 31, lines 42-46). Thus, since a high bandwidth is required to provide "dynamic display of images provided by a

camera of the second VP on at least one UI, as currently amended, Jain does not teach the subject matter of claim 17. Yet further, claim 17 depends from allowable claim 1. Accordingly, the rejection of claim 17 is deemed to be overcome.

Regarding claim 20, Jain discloses a central master computer and a plurality of slave computers (col. 31, lines 15-67, and col. 32, lines 1-18). Image frame capture is done by each slave computer, and image processing is done on each slave computer. (col. 31, lines 20-23). In fact, Jain clearly states that "The central master computer and the remote slave computers communicate at a high symbolic level; **minimal image information is exchanged**. Hence only a very low network bandwidth is required for master-slave communication." (col. 31, lines 42-46). Thus, mostly symbols are communicated from the slave computers to the central master computer.

By contrast, independent claim 20, as currently amended, requires "communication enabling a **continually updated image display** on the at least one UI representing a current state of the second VP". This **maximal communication of image information** requires a high-bandwidth connection to enable real-time dynamic updating of the display on the UI of the images provided by a camera of the second VP.

Further, claim 20 requires that a first VP have "graphical representation being adapted to respond to user action so as to cause the first VP to instruct

the at least one UI to establish communication with the second VP". Note that each VP of Applicants' invention is responsible for image processing and analysis. Examiner inherently asserts that a VP of Applicants' invention is like a "slave computer" of Jain by citing Fig. 15 and col. 31, lines 36-37. However, Jain is silent on any slave initiating communication. Instead, in Jain, the **master computer** initiates communication between itself and a plurality of video processing workstations (col. 31, lines 36-37, and col. 31, lines 51-54). By contrast, in Applicants' invention, a first VP instructs the at least one UI to establish communication with the second VP. Thus, a first VP (cf. "slave" in Jain) in Applicant's invention initiates communication between a second VP and a UI (cf. "master" in Jain). Thus, the roles of "master" and "slave" as set forth in Jain do not apply to VPs and UIs in Applicant's invention, since a VP exhibits the video processing functions of a "slave", **and** the communication initiation functions of a "master". Thus, Jain fails to teach a "graphical representation" adapted as set forth in claim 20, since Jain does not teach a first VP " to instruct the at least one UI to establish communication with the second VP."

At the level of system architecture, the ***architecture*** of the machine vision system of Applicants' invention as set forth in claim 20 is distinctly different from the architecture set forth in Jain in section 9.1.4 of col. 31 and col. 32. In Jain, a master central graphical work station controls four video processing work stations (col. 31, lines 36-37) (slaves). The four video processing workstations function as slaves to the master central graphical work

station. By contrast, in Applicants' invention as set forth in currently amended claim 20, there is no single master, since each VP can control another VP of a plurality of VPs. This control is mediated using a UI. By contrast, Jain is silent on any computer being used to mediate control. Thus, the architecture set forth in Applicants' claim 20 implies that each control event involves at least three computers (a first VP, a second VP, and a UI), whereas a control event as set forth in Jain involves only two computers (a master and a slave). Accordingly, the rejection of claim 20 is deemed to be overcome.

Regarding claims23-24, the Examiner cites col. 22, lines 6-7. However, the "video control buttons control video playback" from the laser disk player. This is not real-time communication of a VP with a UI as in Applicants' invention set forth in claims 20 and 23-24. Moreover, clicking on the graphical representation in Fig. 4 is NOT the same as clicking on a graphical representation displayed by the UI of Applicants' invention because that event causes the UI to begin communicating with another VP, thereby switching VPs (from a first VP to a second VP), and consequently **switching** the **camera** that is being viewed in a "continually updated" fashion by the UI. Therefore, "clicking" on the graphical representation of Fig. 4 does NOT cause "the first VP to instruct the at least one UI to establish communication with the second VP", as claimed by Applicants in currently amended claim 20. Additionally, claims 23 and 24 each depend from claim 20, herein deemed to be allowable as

amended. Accordingly, the rejection of claims 23 and 24 is deemed to be overcome.

Regarding claim 25, since claim 25 depends from claim 20, herein deemed to be allowable as amended, the rejection of claims 25 is deemed to be overcome.

Regarding claim 30, as currently amended, Jain discloses a central master computer and a plurality of slave computers (col. 31, lines 15-67, and col. 32, lines 1-18). Image frame capture is done by each slave computer, and image processing is done on each slave computer. (col. 31, lines 20-23). In fact, Jain clearly states that "The central master computer and the remote slave computers communicate at a high symbolic level; **minimal image information is exchanged**. Hence only a very low network bandwidth is required for master-slave communication." (col. 31, lines 42-46). Thus, mostly symbols are communicated from the slave computers to the central master computer.

By contrast, independent claim 30, as currently amended, requires "communication enabling a **continually updated image display** on the at least one UI representing a current state of the second VP". This **maximal communication of image information** requires a high-bandwidth connection to enable real-time dynamic updating of the display on the UI of the images provided by a camera of the second VP.

Further, claim 30 requires that a first VP have "graphical representation being adapted to respond to user action so as to cause the first VP to instruct the UI to establish communication with the second VP". Note that each VP of Applicants' invention is responsible for image processing and analysis. Examiner inherently asserts that a VP of Applicants' invention is like a "slave computer" of Jain by citing Fig. 15 and col. 31, lines 36-37. However, Jain is silent on any slave initiating communication. Instead, in Jain, the **master computer** initiates communication between itself and a plurality of video processing workstations (col. 31, lines 36-37, and col. 31, lines 51-54). By contrast, in Applicants' invention, a first VP instructs the UI to establish communication with the second VP. Thus, a first VP (cf. "slave" in Jain) in Applicant's invention initiates communication between a second VP and a UI (cf. "master" in Jain). Thus, the roles of "master" and "slave" as set forth in Jain do not apply to VPs and UIs in Applicant's invention, since a VP exhibits the video processing functions of a "slave", **and** the communication initiation functions of a "master". Thus, Jain fails to teach a "graphical representation" adapted as set forth in claim 30, since Jain does not teach a first VP " to instruct the UI to establish communication with the second VP."

At the level of system architecture, the ***architecture*** of the machine vision system of Applicants' invention as set forth in claim 30 is distinctly different from the architecture set forth in Jain in section 9.1.4 of col. 31 and col. 32. In Jain, a master central graphical work station controls four video

processing work stations (col. 31, lines 36-37) (slaves). The four video processing workstations function as slaves to the master central graphical work station. By contrast, in Applicants' invention as set forth in currently amended claim 30, there is no single master, since each VP can control another VP of a plurality of VPs. This control is mediated using a UI. By contrast, Jain is silent on any computer being used to mediate control. Thus, the architecture set forth in Applicants' claim 30 implies that each control event involves at least three computers (a first VP, a second VP, and a UI), whereas a control event as set forth in Jain involves only two computers (a master and a slave). Accordingly, the rejection of claim 30 is deemed to be overcome.

Regarding claim 33, clicking on the graphical representation in Fig. 4 is NOT the same as clicking on a graphical representation displayed by the UI of Applicants' invention because that event causes the UI to begin communicating with another VP, thereby switching VPs (from a first VP to a second VP), and consequently **switching** the **camera** that is being viewed in a "continually updated" fashion by the UI. Therefore, "clicking" on the graphical representation of Fig. 4 does NOT cause "the first VP to instruct the at least one UI to establish communication with the second VP", as claimed by Applicants in currently amended claim 33. Instead, in Jain, multiple video perspectives are integrated into a single comprehensive model of the action". (Col. 36, lines 17-20) Different camera perspectives can then be derived from this single model.

(Col. 36, lines 20-22) Additionally, claims 33 depends from claim 30, herein deemed to be allowable as amended. Accordingly, the rejection of claim 33 is deemed to be overcome.

Regarding claim 34, since claim 34 depends from claim 30, herein deemed to be allowable as amended, the rejection of claims 34 is deemed to be overcome.

Claims 8-9, 19, 21-22, 26-29, and 31-32 have been rejected under 35 USC 103(a) as being unpatentable over Jain et al and Blowers et al (US Patent No. 6,298,474) ("Blowers").

Regarding claims 8-9, although Blowers may show a check box, and a radio button may also be found in other machine vision systems, combining Blowers with Jain does not provide the method of claims 8-9, since these claims depend from a base claim and intervening claims that are all deemed to be allowable, as explained above. Consequently, the rejection of claims 8-9 is deemed to be overcome.

Regarding claim 19, Blowers fails to teach a "link function", and Blowers also fails to teach that "a user is enabled to configure the second VP using the at least one UI". The Examiner cites col. 7, line 44, but that merely relates to an image digitizer/frame grabber that is for acquiring images; not related to a user interface (UI) at all. The Examiner also cites col. 8, lines 10-11, relating to "custom controls for image processing, etc.", but merely relates to specialized software modules, not a user interface (UI). Thus, the "motivation to combine" advanced by the Examiner is moot, since combining Blowers with Jain would not provide Applicants' invention. Accordingly, the rejection of claim 19 is deemed to be overcome.

Regarding claims 21-22, and 31-32, the Examiner cites col. 9, lines 26-28 of Blowers, yet this states that "the system can communicate with other systems via a standard protocol over a network". Thus, Blowers is saying that a **first** machine vision system can communicate with a **second** machine vision system. By contrast, Applicants' teach a **single** machine vision system having a **plurality** of vision processors (VPs), and at least one user interface (UI), all of which can communicate amongst each other via a network, as shown in Fig. 3 of the Specification. Thus, the architecture of the machine vision system of Applicants' invention is different from both Blowers and Jain. Moreover, combining Blowers with Jain cannot result in the architecture of Applicants'

invention. Thus, the motivation to combine Blowers and Jain put forth by the Examiner is moot. Accordingly, the rejection of claims 21-22, and 31-32 is deemed to be overcome.

Regarding claims 26-29, the Examiner asserts that Blowers teaches the inclusion of a spreadsheet in a machine vision system, citing Fig. 4. However, the description of Fig. 4 is "a screen display of the hardware manager of Fig. 3"; no mention of a spreadsheet. In fact, Fig. 4 does not look like a spreadsheet, and is not called a spreadsheet, nor does it behave like a spreadsheet. Further, in col. 8, lines 42-60, a discussion of Fig. 4 never mentions a spreadsheet. Since Blowers does not teach a spreadsheet in a machine vision system, combining Blowers with Jain would not provide Applicants' invention. Thus, the motive to combine Blowers and Jain is rendered moot. Accordingly, the rejection of claims 26-29 is deemed to be overcome.

The prior art made of record and not relied upon does not appear to present an impediment to the allowance of the present application.

Accordingly, Applicants assert that the present application is in condition for allowance, and such action is respectfully requested. The Examiner is invited to phone the undersigned attorney to further the prosecution of the present application.

Respectfully Submitted,

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